

The great "red" spot was distinctly visible, although it is now of a pale sandy colour, somewhat whiter along its major axis. It exhibits a certain amount of delicate structure parallel to its margin. The red spot was on the central meridian at 12^h 10^m G.M.T.

As the opposition of *Jupiter* occurred at 8 A.M. on February 19, it seemed not improbable that the transit of the 2nd satellite on that day, and of the 1st satellite on the 20th, might also be attended by a partial concealment of their shadows. Telegraphic notice was accordingly sent to several correspondents inviting co-operation.

Near the middle of the transit of the 2nd satellite's shadow on the 19th, the shadow seemed almost perfectly round, the satellite being indistinguishable without an exact knowledge of its position. It was not until about half an hour before the egress, when the satellite began to be plainly visible, that it appeared to encroach upon its shadow to an appreciable extent. In this instance, therefore, the diminution of the shadow seems to have been quite as much due to the irradiation of light around the relatively bright satellite, as to an actual occultation of the shadow. A second drawing was made showing the slight deformation of the shadow, and also giving the detail of the belts as they appeared about 14^h 15^m G.M.T. The observed Greenwich mean times at egress were:

					h	m	s
II.	Tr. E. begins	...	...		14	28	8
II.	Tr. E. ends	...	...		14	32	53
II.	Sh. E. ends	...	...		14	33	53

Dun Echt Observatory:
1885, April 6.

Occultation of Aldebaran, 1885, February 22, observed at Dun Echt, Aberdeen. By Dr. R. Copeland.

(Communicated by the Earl of Crawford and Balcarres.)

Occultation of Aldebaran, 1885, February 22.

	Dun Echt M.T.	Instrument.	Power.	Observer.
	h m s			
Disappearance	4 56 0.1	15-in. Grubb	132	Ralph Copeland
Reappearance	5 [52] 39.9	"	"	"
Disappearance	4 56 0.35	6-in. Simms	94	J. G. Lohse
Reappearance	5 52 41.2	"	"	"

In each case the phenomenon was instantaneous. A strong gale was blowing at the time.

The time of reappearance was recorded, at the 15-inch, one minute later than that given, which agrees with the computed time and with Mr. Lohse's observation.

Dun Echt Observatory:
1885, April 6.

Occultations of Stars by the Moon in the years 1876-1880, and resulting Final Equations between the Errors of the Tables and the Errors of Observation. By G. L. Tupman.

The place of observation was a few hundred yards east of the Royal Observatory, Greenwich. The chronometer employed (Fletcher 1050) was compared, by the intervention of another, with the sidereal standard clock of the Royal Observatory, a few hours before and after every recorded occultation. The Greenwich mean times have been calculated in the usual way from the sidereal time at mean noon given in the *Nautical Almanac*.

The telescope generally used was an Equatorial of $4\frac{1}{2}$ inches aperture, furnished with position circle and crossed-bar micrometer with power 66. For observing emersions one of the bars was placed to cut off a small segment of the Moon's limb at the expected point of reappearance of the star.

The final equations between the errors of Hansen's Tables and the errors of observation have been calculated by the method employed at the Royal Observatory, described in the Introduction to the *Greenwich Observations* and in Main's *Spherical Astronomy*.

The observed time is supposed to be increased by t^s ; the star's Right Ascension and North Polar Distance by e'' and f'' (seconds of arc); the Moon's R.A. and N.P.D. by x'' and y'' ; and the parallax and semidiameter are supposed to be multiplied by $\left(1 + \frac{m}{1000}\right)$ and $\left(1 + \frac{n}{1000}\right)$ respectively.

The Moon's Right Ascension and North Polar Distance were interpolated, with second differences, from the hourly ephemeris in the *Nautical Almanac*, which did not, in these years, include Professor Newcomb's correction. The Equatorial horizontal parallax and semidiameter were interpolated, also with second differences, from the same work.

The apparent places of the stars have been taken, generally, from the section "Elements of Occultations" in the *Nautical Almanac*. For the smaller stars the mean places were brought up from the catalogues indicated, and the reductions to apparent place computed by means of the "Independent Constants." The final equations have been computed for such stars because it is probable, from the brightness of the stars, that modern observations of them will, before long, be obtainable.